

WHAT IS CLAIMED IS:

1 1. A method comprising:
2 initiating a transaction using a protocol that directs
3 packets based on physical location of a receiving device over
4 a switching fabric that directs packets based on path routing
5 information in packets, by establishing a virtual link partner
6 relationship between a first component and a second component
7 coupled by a switching fabric.

1 2. The method of claim 1 wherein the switching fabric
2 includes a pair of bridges.

1 3. The method of claim 1 wherein the protocol is the
2 Data Link Layer Packet protocol (DLLP) and the switching
3 fabric is the PCI Express-AS Fabric, and the transaction is
4 used in establishing a power management state of a given link
5 that is shared by the first and second components.

1 4. The method of claim 1 wherein the transaction is for
2 a protocol communication that assumes a point-to-point
3 connection between link partners.

1 5. The method of claim 2 wherein initiating includes:
2 issuing by the first component a data link layer packet
3 protocol packet to a protocol virtualization control register
4 in the bridge that is associated with the first component.

1 6. The method of claim 5 wherein initiating further
2 includes:
3 decoding the data link layer packet protocol packet
4 issued by the first component and sending an event

5 notification to a protocol virtualization control register in
6 the bridge for the second component.

1 7. The method of claim 5 wherein initiating further
2 includes:

3 writing an event notification into the protocol
4 virtualization control register within the bridge for the
5 second component.

1 8. The method of claim 5 wherein initiating further
2 includes:

3 generating a corresponding DLLP packet; and
4 sending the corresponding DLLP packet to the second
5 component.

1 9. The method of claim 2 wherein initiating comprises:
2 issuing by the first component a data link layer packet
3 protocol packet to the bridge associated with the first
4 component;

5 decoding the data link layer packet protocol packet
6 issued by the first component and sending an event
7 notification to the bridge for the second component; and

8 writing the event notification into the protocol
9 virtualization control register within the bridge for the
10 second component.

1 10. The method of claim 9 wherein initiating further
2 includes:

3 generating a corresponding DLLP packet including data in
4 the packet that was issued by first component; and

5 propagating the corresponding DLLP packet to the second
6 component.

1 11. A computer program product residing on a computer
2 readable medium for processing a packet comprises instructions
3 to cause a computer to:

4 initiate a transaction by a first component to a second
5 component over a switching fabric that requires routing
6 information; and

7 establish a virtual link partner relationship between the
8 first component and the second component in response to the
9 initiated transaction.

1 12. The computer program product of claim 11 wherein the
2 switching fabric includes a pair of bridges, each bridge
3 including a protocol virtualization control register.

1 13. The computer program product of claim 11 wherein the
2 instructions to initiate the transaction is the Data Link
3 Layer Packet protocol (DLLP), the switching fabric is the PCI
4 Express-AS Fabric, and the transaction establishes a power
5 management state of a given link that is shared by the first
6 and second components.

1 14. The computer program product of claim 11 wherein the
2 transaction is for a protocol communication that assumes a
3 point-to-point connection between link partners.

1 15. The computer program product of claim 11 wherein
2 instructions to initiate further comprises instructions to:
3 issue by the first component a data link layer packet
4 protocol packet to the bridge associated with the first
5 component.

1 16. The computer program product of claim 11 wherein
2 instructions to initiate further comprises instructions to:
3 decode the data link layer packet protocol packet issued
4 by the first component; and
5 send an event notification to the bridge for the second
6 component.

1 17. The computer program product of claim 16 wherein
2 instructions to initiate further comprises instructions to:
3 write the event notification into the protocol
4 virtualization control register within the bridge for the
5 second component.

1 18. The computer program product of claim 17 wherein
2 instructions to initiate further comprises instructions to:
3 generate a corresponding DLLP packet, which is
4 effectively the same packet that was issued by first
5 component; and
6 propagate the corresponding DLLP packet to the second
7 component.

1 19. The computer program product of claim 11 wherein
2 instructions to initiate further comprises instructions to
3 issue by the first component a data link layer packet
4 protocol packet to the bridge associated with the first
5 component;
6 decode the data link layer packet protocol packet issued
7 by the first component and sending an event notification to
8 the bridge for the second component; and

9 write the event notification into the protocol
10 virtualization control register within the bridge for the
11 second component.

1 20. The computer program product of claim 19 wherein
2 instructions to initiate further comprises instructions to:
3 generate a corresponding DLLP packet, which is
4 effectively the same packet that was issued by first
5 component; and
6 propagate the corresponding DLLP packet to the second
7 component.

1 21. A network system comprising:
2 a switching fabric that requires routing information in
3 packets that traverse the fabric;
4 a first component;
5 a second component that communicates with the first
6 component over the switching fabric by a protocol that does
7 not include routing information with the first component and
8 the second establishing a virtual link partner relationship to
9 communication using the protocol.

1 22. The system of claim 21 wherein the switching fabric
2 includes first and second bridges, each first and second
3 bridge including a protocol virtualization control register.

1 23. The system of claim 21 wherein the protocol is the
2 Data Link Layer Packet protocol (DLLP), the switching fabric
3 is a PCI Express-AS Fabric, and the transaction establishes a
4 power management state of a given link that is shared by the
5 first and second components.

1 24. The system of claim 21 further comprising:
2 a device to store instructions to cause the first
3 component to:
4 issue a data link layer packet protocol packet to a
5 protocol virtualization control register in the first bridge
6 that is associated with the first component.

1 25. The system of claim 24 wherein the first bridge
2 includes instructions to cause the first bridge to:
3 decode the data link layer packet protocol packet; and
4 send an event notification to the second bridge for the
5 second component.

1 26. The system of claim 24 wherein the second the bridge
2 includes instructions to cause the second bridge to:
3 receive the event notification into the protocol
4 virtualization control register within the second bridge for
5 the second component; and
6 generate a corresponding DLLP packet to the second
7 component.

1 27. The system of claim 21 wherein the second the bridge
2 includes a device to store instructions to cause the second
3 bridge to:
4 receive the event notification into the protocol
5 virtualization control register within the second bridge for
6 the second component; and
7 generate a corresponding DLLP packet to the second
8 component.

1 28. A network system comprising:

2 a pair of network components;
 3 a switching fabric coupling the network components, the
 4 switching fabric of the type that requires routing information
 5 in packets that traverse the fabric to couple the components
 6 and with the second component establishing a virtual link
 7 partner relationship to communication using the protocol.

1 29. The system of claim 28 wherein the pair of
 2 components are computers coupled to a pair of bridges in the
 3 fabric, each bridge including a protocol virtualization
 4 control register.

1 30. The system of claim 28 wherein the protocol is the
 2 Data Link Layer Packet protocol (DLLP), the switching fabric
 3 is a PCI Express AS Fabric, and the transaction establishes a
 4 power management state of a given link that is shared by the
 5 first and second components.